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By: 

LINDA E. HASTINGS

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Attorney Docket No.: SOH 14,569A

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

Inventor : Norihiro IWAI, et al.  
Serial No. :  
Filed : June 25, 2001  
Title : **STRUCTURE AND METHOD FOR  
MANUFACTURING A SEMICONDUCTOR  
OPTICAL WAVEGUIDE**  
Examiner :  
Group Art Unit :

Assistant Commissioner for Patents  
**BOX PATENT APPLICATION**  
Washington, D.C. 20231

**PRELIMINARY AMENDMENT**

SIR:

Prior to calculation of the filing fee, and prior to examination on the merits, please amend the above-captioned application as follows:

## **IN THE SPECIFICATION**

Page 1, after line 2, please insert the following:

### **--CROSS REFERENCE TO RELATED APPLICATION**

This application is a Divisional of Application No. 08/961,851, filed on October 31, 1997.--

## **IN THE CLAIMS**

Please cancel claims 1-12, without prejudice or disclaimer.

Please rewrite claim 13 as follows:

13. (Once Amended) A semiconductor optical waveguide as defined in claim 14, wherein said optical element is a semiconductor laser.

Please add the following new claims 14 and 15:

--14. A semiconductor optical waveguide comprising a first semiconductor layer overlying a semiconductor substrate, said first semiconductor layer having an aluminum concentration which increases from a central part, as viewed in the thickness direction of said semiconductor layer toward both surfaces of said first semiconductor layer, said first semiconductor layer having a non-oxidized region constituting an optical waveguide and an oxidized region surrounding said non-oxidized region and an optical element having an active layer coupled with said optical waveguide.--

--15. A semiconductor optical waveguide as defined in claim 14 wherein said first semiconductor layer has a composition of  $\text{Al}_x\text{Ga}_{1-x}\text{As}$ , given x being not greater than 1.--

### REMARKS

Claims 13-15 are presently pending, claims 1-12, having been cancelled, without prejudice or disclaimer, and new claims 14-15, having been added by this Preliminary Amendment.

New claims 13-15 correspond to Group II, claims 13, 15 and 17, in the Restriction Requirement mailed on January 17, 2001, in the parent application, application no. 08/961,851, of which this is a Divisional, claims 13, 15, and 17 having not been elected in the parent application.

Claim 11, which has been cancelled, without prejudice or disclaimer herein, was allowed in the parent application. Claims 1-8, which are being cancelled, without prejudice or disclaimer, were not elected in response to a Restriction Requirement in the parent application mailed on March 4, 1999, and Applicant expressly reserves the right to file a continuing application containing claims 1-8. Claim 9, which is being cancelled, without prejudice or disclaimer herein, was also cancelled, without prejudice, in the parent application, and Applicant also expressly reserves the right to file a continuing application containing claim 9. Finally, claims 10 and 12 were amended in the parent application to become new method claims and were withdrawn from consideration by the Examiner as being directed to a non-elected process by an Office Action in the parent application mailed on February 2, 2000. Claims 10 and 12 were subsequently cancelled, without prejudice or disclaimer, by a Preliminary Amendment filed in the parent application on October 23, 2000. Nevertheless, Applicant expressly reserves the right to file a continuing application containing claims 10 and 12 in the form in which they were

originally filed in the parent application or in the form of method claims, as they were subsequently amended.

Attached hereto is a marked-up version of the changes made to the claims by the current amendment. The attached pages are captioned "**VERSION WITH MARKINGS TO SHOW CHANGES MADE.**"

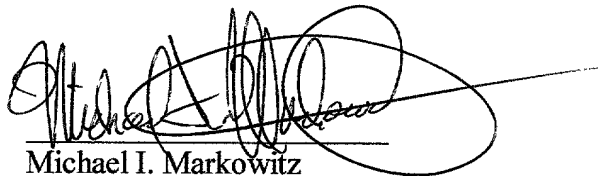
### **CLOSING**

An earnest effort has been made to be fully responsive to the Examiner's objections. In view of the above amendments and remarks, it is believed that independent claim 14 is in condition for allowance, as well as those claims dependent therefrom. Passage of this case to allowance is earnestly solicited.

However, if for any reason the Examiner should consider this application not to be in condition for allowance, he is respectfully requested to telephone the undersigned attorney at the number listed below prior to issuing a further Action.

Any fee due with this paper, not fully covered by an enclosed check, may be charged on Deposit Account 08-1634.

Respectfully submitted,



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**VERSION WITH MARKINGS TO SHOW CHANGES**  
**MADE**

**IN THE CLAIMS**

Claim 13 has been rewritten as follows:

13. (Once Amended) A semiconductor optical [device] waveguide as defined in claim [12,] 14, wherein said optical element is a semiconductor laser.